

# Chronic Disease Cost Calculator



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# What Is the Chronic Disease Cost Calculator?

- A downloadable tool that can be used to generate State estimates for Medicaid spending on treating 6 chronic diseases:
  - Heart failure
  - Heart disease
  - Stroke
  - Hypertension
  - Diabetes
  - Cancer

# Why Was the Calculator Developed?

- Chronic diseases are among the most prevalent, costly, and preventable of all health problems.
- Rapid Medicaid spending growth, especially on chronic diseases, places a significant burden on State budgets.
- States need information on the financial impact caused by chronic diseases to inform program and policy decisions.
- It is important that States have disease cost estimates based on consistent data and methodology.

# Partners in Developing the Calculator

- CDC contracted with RTI International to develop the Calculator, including creating a disease cost and prevalence estimation methodology.
- Collaboration involved:
  - Agency for Healthcare Research and Quality
  - National Association of Chronic Disease Directors
  - National Pharmaceutical Council
  - 3 divisions within the CDC

# How Does the Calculator Work?

- Provides State-specific estimates of disease prevalence, per-person costs, and total Medicaid spending for 6 chronic diseases.
- Users select which State they want to generate estimates for, which diseases, and whether estimates should be provided by age group or by gender.
- Users have the option of using disease prevalence and per capita cost estimates provided as defaults or entering their own inputs.

# How Were Cost Estimates Developed?

- Used data from AHRQ's Medical Expenditure Panel Survey (MEPS), the Centers for Medicare & Medicaid Services' Medicaid Analytic eXtract File (MAX), and the Medicaid Statistical Information System (MSIS).
- State-specific costs per person with a disease were estimated using a regression approach, which minimizes double counting.
- Per person costs were combined with State-specific prevalence estimates to generate total State Medicaid costs.

# Dissemination

Prior to release of Calculator:

- National Association of State Medicaid Directors: November 2007
- AHRQ State Quality Tools Workshops: December 2007 & January 2008
- Web conferences for Medicaid Directors and Chronic Disease Directors : October 2008
- Other presentations and Web conferences given to various groups in the months prior to Calculator release
- FAQs based on Web conference input

# How Should the Estimates Be Used?

- Provide information that can be used to assess the value of investing in disease prevention and disease management programs.
- Educate policymakers about the economic impact of chronic diseases on their State and communicate the urgency of addressing the problem.
- Stimulate collaboration among Medicaid Directors, Chronic Disease Directors, health departments, budget offices, and policymakers.

# What if Your State Has Its Own Estimates?

- Calculator estimates are not meant to override other estimates.
- Prevalence and cost estimates in the Calculator may differ from other State Medicaid estimates for several reasons:
  - Different **data sources**
  - Different estimation **methodologies**
  - Different **time periods**
- Consider which set of data and modeling assumptions are most appropriate in a given situation.

# Plans for Future Iterations

- Create Version 2: Include estimates for asthma, depression, and arthritis.
- Expand estimates to Medicare, Medicaid, private payers, and total population.
- Update data: 2006 MEPS (includes Medicare Part D).
- Include estimates of indirect costs due to lost productivity.
- Include projections of future costs to 10 years.

# Where Is the Calculator Available?

- The Calculator can be downloaded from [www.cdc.gov/nccdphp/resources/calculator.htm](http://www.cdc.gov/nccdphp/resources/calculator.htm).
- User Guide and Technical Appendix, which are available at the download site, provide guidance on the Calculator.
- Technical support can also be requested: [quality\\_tools@ahrq.hhs.gov](mailto:quality_tools@ahrq.hhs.gov)

# Questions?

- ❖ If you have questions during the Q&A session, please use the Raise Hand function; you will be placed into a queue to ask your question.

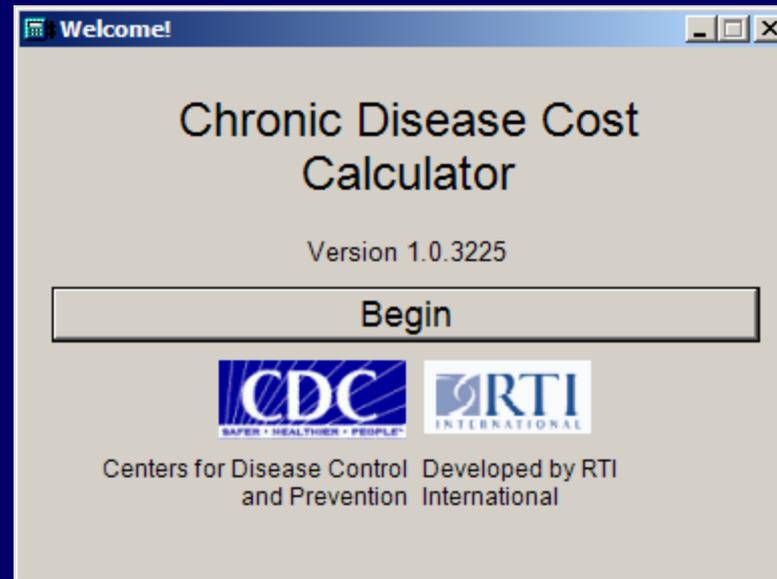
To ask a question, click on the **Raise Hand** button in the Participants Panel and the Host will unmute your line.



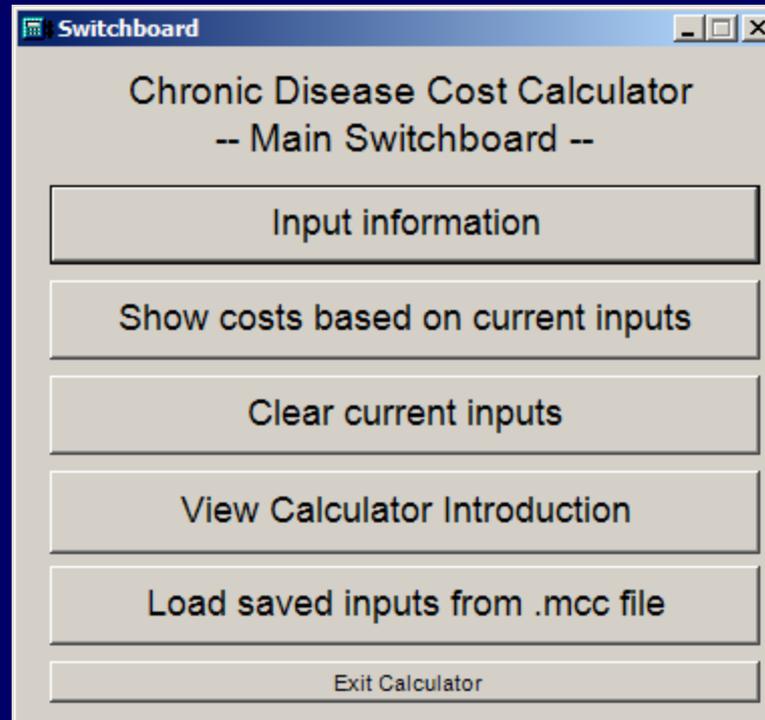
Once your question has been answered, please click the **Lower Hand** Icon and the Host will mute your line.



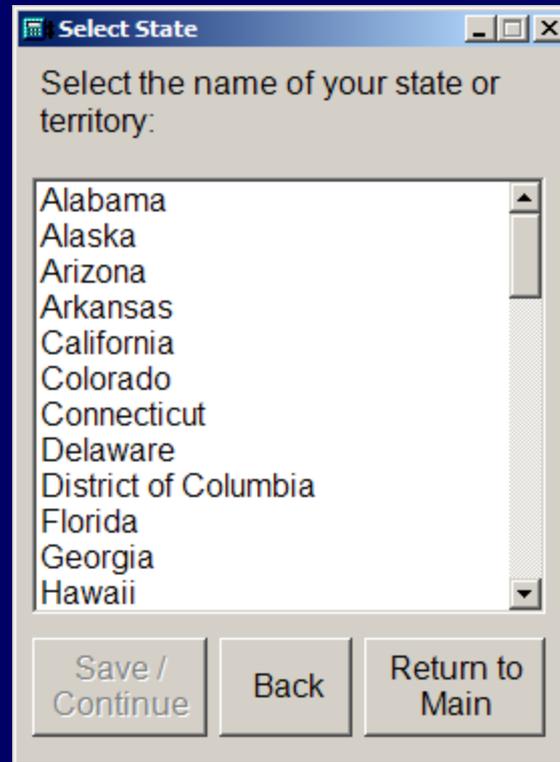
# Tool Screenshots



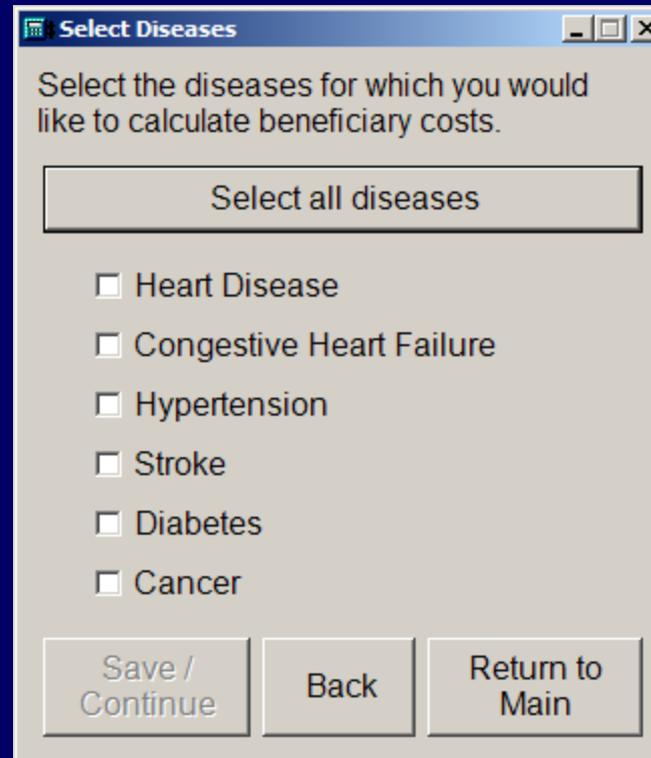
# Tool Screenshots



# Tool Screenshots



# Tool Screenshots



The screenshot shows a window titled "Select Diseases" with a standard Windows-style title bar. The main text inside the window reads: "Select the diseases for which you would like to calculate beneficiary costs." Below this text is a large button labeled "Select all diseases". Underneath that is a list of six diseases, each with an unchecked checkbox: "Heart Disease", "Congestive Heart Failure", "Hypertension", "Stroke", "Diabetes", and "Cancer". At the bottom of the window are three buttons: "Save / Continue", "Back", and "Return to Main".

Select Diseases

Select the diseases for which you would like to calculate beneficiary costs.

Select all diseases

- Heart Disease
- Congestive Heart Failure
- Hypertension
- Stroke
- Diabetes
- Cancer

Save / Continue    Back    Return to Main

# Tool Screenshots

**Number of Medicaid beneficiaries in your state**

In order to estimate the cost of chronic disease to Medicaid, the calculator needs the total number of beneficiaries in your state. In addition, if you would like to calculate costs by gender or by adult age group, indicate so below and estimate the proportion of the Medicaid population in the relevant categories. Default estimates are provided from the Medicaid Statistical Information System (MSIS) Fiscal Year 2004.

Total number of beneficiaries (including children)

Use value from MSIS.

Yes, I want to calculate chronic disease costs by sex.

Percent of Medicaid population that is:

Use values from MSIS. Male  %  
Female  %

Yes, I want to calculate chronic disease costs by age group.

# Tool Screenshots

**Prevalence of chronic diseases in your state**

In order to estimate the cost of chronic disease to Medicaid, the calculator needs the prevalence of each disease among beneficiaries in your state. In addition, if you indicated on one of the earlier forms that you would like to calculate costs by gender or by adult age group, you will need to estimate prevalence within the relevant categories. Default estimates are provided from the 2001-2005 Medical Expenditure Panel Survey (MEPS). Prevalence was defined as the percentage of the Medicaid population reporting treatment for or problems with the disease in the previous year. ?

Heart Disease | CHF | Hypertension | Stroke | Diabetes | Cancer

Prevalence of heart disease among entire Medicaid population

%    Calculated based on prevalence by sex.

Prevalence of heart disease by sex

Uses averages (by sex) from MEPS. Uncheck this box to enter your own values.

Males	<input type="text" value="6.0"/>	%
Females	<input type="text" value="8.4"/>	%

? ?

Save / Continue    Back    Return to Main

# Tool Screenshots

**Cost per person with chronic disease in your state**

In order to estimate the cost of chronic disease to Medicaid, the calculator needs the average cost for treating each disease per beneficiary in your state. In addition, if you indicated on one of the earlier forms that you would like to calculate costs by gender or by adult age group, you will need to estimate cost values within the relevant categories. Default estimates are provided from the 2001-2005 Medical Expenditure Panel Survey (MEPS), inflated to 2007\$. We strongly encourage all users to choose the default values provided.

Heart Disease | CHF | Hypertension | Stroke | Diabetes | Cancer

Medicaid cost for treating heart disease per person with heart disease among entire Medicaid population

\$ 1,340      Calculated based on cost per person and prevalence by sex.

Medicaid cost for treating heart disease per person with heart disease by sex

Males	\$ 1,290	<input checked="" type="checkbox"/> Uses averages (by sex) from MEPS. Uncheck this box to enter your own values. <span style="float: right;">?</span>
Females	\$ 1,370	

Save / Continue      Back      Return to Main

# Tool Screenshots

**Calculated Costs**

The calculated costs to your state for each disease are listed below. Note that user inputs (versus inputs based on averages from MEPS) are italicized. 'Insuf' represents inputs for which no value was entered and no default was available; outcomes based on those values are not calculated.

STATE Alabama

Heart Disease | CHF | Hypertension | Stroke | Diabetes | Cancer | All selected diseases

Group	Beneficiaries	Prevalence	Beneficiaries w/ disease	Cost per beneficiary	Total Medicaid costs
US overall	55,002,107	6.5%	3,578,268	\$1,320	\$4,714,560,000
Alabama					
Overall	808,192	7.5%	60,248	\$1,340	\$80,786,000
Males	326,326	6.0%	19,565	\$1,290	\$25,188,000
Females	481,866	8.4%	40,683	\$1,370	\$55,598,000

Annual expenditures inflated to 2007 \$. Default prevalence has been rounded to one decimal place, cost per beneficiary is rounded to the nearest \$10, and total Medicaid costs are rounded to the nearest \$1,000. All calculations performed using unrounded values. Sums of the totals may not equal the overall total due to rounding. Rounding error is less than 0.1%. Prevalence was defined as the percentage of the Medicaid population reporting treatment for or problems with the disease in the previous year. All results generated from the tool are estimates. Actual costs may be larger or smaller than those reported. Please see the Technical Appendix for a detailed description of the methodology used to generate the estimates.

Print Preview | Print | Save Output to Text File | Save Inputs to .mcc File | Back | Return to Main

# Tool Screenshots

**Calculated Costs**

The calculated costs to your state for each disease are listed below. Note that user inputs (versus inputs based on averages from MEPS) are italicized. 'Insuf' represents inputs for which no value was entered and no default was available; outcomes based on those values are not calculated.

STATE Alabama

Heart Disease CHF Hypertension Stroke Diabetes Cancer All selected diseases

Group	Heart Disease	CHF	Hypertension	Stroke	Diabetes	Cancer	Total Medicaid cost
<b>Costs reported in \$1,000's</b>							
US overall	\$4,714,560	\$2,060,876	\$16,183,936	\$9,745,191	\$12,415,769	\$2,088,373	\$47,208,700
Alabama							
Overall	\$80,786	\$31,209	\$264,194	\$151,150	\$208,218	\$30,706	\$766,263
Males	\$25,188	Insuf	\$78,630	\$55,009	\$69,729	\$8,746	\$245,902
Females	\$55,598	Insuf	\$185,563	\$96,141	\$138,489	\$21,960	\$520,361

\*Includes costs for all selected diseases.

Annual expenditures inflated to 2007 \$. Sums of the totals may not equal the overall total due to rounding. Rounding error is less than 0.1%. Prevalence was defined as the percentage of the Medicaid population reporting treatment for or problems with the disease in the previous year. All results generated from the tool are estimates. Actual costs may be larger or smaller than those reported. Please see the Technical Appendix for a detailed description of the methodology used to generate the estimates.

*The estimates for Hypertension and Diabetes include a portion of the costs of complications including heart disease, CHF and stroke. The sum of costs over selected diseases that include Hypertension and Diabetes could overestimate the costs associated with all the selected diseases.*

Print Preview Print Save Output to Text File Save Inputs to .mcc File Back Return to Main